



10/13/00

PATENT APPLICATION TRANSMITTAL LETTER

Docket Number (Optional)
ASPL-007

To the Commissioner of Patents and Trademarks:

Transmitted herewith for filing under 35 U.S.C. 111 and 37 CFR 1.53 is the patent application for **SLAB LEVELING SYSTEM AND METHOD** by Charles Lee Asplin.

Enclosed are:

- ☒ 19 pages of written description, claims and abstract.
☒ 4 sheets of drawings.
☐ an assignment of the invention to _____, a North Dakota corporation, with cover sheet.
☒ executed declaration of the inventor.
☐ a certified copy of a _____ application.
☒ power of attorney.
☒ a verified statement to establish small entity status under 37 CFR 1.9 and 1.27.
☒ information disclosure statement. (14 documents)
☐ preliminary amendment.
☒ Express Mail Certificate No: EK947412074US

CLAIMS AS FILED

	Number Filed	Number Extra	Rate	Fee
BASIC FEE			\$ 710	\$710
TOTAL CLAIMS	16 - 20 =	0	X \$ 18	\$ 0
INDEPENDENT CLAIMS	3 - 3 =	0	X \$ 80	0
MULTIPLE DEPENDENT CLAIM PRESENT			\$ 270	
* Number Extra must be Zero or Larger			TOTAL	\$ 710
If applicant has small entity status under 37 CFR 1.9 and 1.27, then divide total fee by 2, and enter amount here			SMALL ENTITY TOTAL	\$ 355

- ☐ Assignment recordation fee 37 CFR 1.21(h) \$ 40.00.
☒ Check No. 7001 in the amount of \$355.00 to cover the filing fee and assignment recordation is enclosed.
☐ The Commissioner is hereby authorized to charge and credit Deposit Account

No. _____ as described below. I have enclosed a duplicate copy of this sheet.

- ☐ Charge the amount of \$ _____ as filing fee.
☐ Credit any overpayment.
☐ Charge any additional filing fees required under 37 CFR 1.16 and 1.17.
☐ Charge the issue fee set in 37 CFR 1.18 at the mailing of the Notice of Allowance, pursuant to 37 CFR 1.311(b).

Date

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**VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS
(37 cfr 1.9(f) & 1.27(b))--INDEPENDENT INVENTOR**

Docket Number (Optional)
ASPL-007

Applicant or Patentee: **Charles Lee Asplin**
Serial or Patent No.:

Filed or Issued: **HEREWITH**

Title: **Slab Leveling System and Method**

As a below named inventor, I hereby declare that I qualify as an independent inventor as defined in 37 CFR 1.9(c) for purposes of paying reduced fees to the Patent and Trademark Office described in:

- ☒ the specification filed herewith with title as listed above.
☐ the application identified above.
☐ the patent identified above.

I have not assigned, granted, conveyed or Licensed and am under no obligation under contract or law to assign, grant convey or license, any rights in the invention to any person who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person had made the invention, or to any concern which would not qualify as a small business concern under 37 CFR 1.9(d) or a nonprofit organization under 37 CFR 1.9(e).

Each person, concern or organization to which I have assigned, granted, conveyed, or licensed or am under an obligation under contract or law to assign, grant, convey, or license any rights in the invention is listed below:

- ☒ No such person, concern, or organization exists.
☐ Each such person, concern or organization is listed below.

Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

Charles Lee Asplin, INVENTOR
909 25th Avenue North
Fargo, North Dakota 58102



Signature of Inventor

10-12-00

Date

SCANNED # 6

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
UTILITY PATENT APPLICATION

TO WHOM IT MAY CONCERN:

5 Be it known that I, Charles Lee Asplin of 909 25th Avenue
North, Fargo, North Dakota 58102, have invented an improvement in
the:

SLAB LEVELING SYSTEM AND METHOD

10 of which the following is a

BACKGROUND OF THE INVENTION:

15 The present invention relates to a method of leveling an
existing concrete slab which has had portions settle into the
ground so as to become uneven over time. More specifically, to a
method of carefully raising a section of the sunken slab so as
not to damage the section and allow for the injection of
pressurized mason's sand into the cavity created between the
bottom of the uneven slab and the settled ground.

20 Regardless of the care and skill used in the initial
construction, concrete slabs tend to become misaligned over time
due to different rates of settlement of the earth. Uplift from
freeze/thaw cycles or tree root lifting are also common causes of
slab misalignment. These problems cause cracks in the slab to
25 develop and can also cause step-like structures to occur between

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sections of the slab. The end result of this condition is the creation of hazards to users and liability for those who are responsible for their care. Additionally, the uneven slabs are extremely difficult to clear of snow and ice during the winter months in the northern areas of the United States, thus creating further hazards and liabilities for their users and owners.

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In the past, there was a number of ways these problems were solved. One of these was to completely remove the damaged section of the slab and then re-pour it. The problem with this method is that although it works very well, it is time consuming and very expensive. The re-pour method also results in a checkerboard looking slab as the new portions are often a very different color from the older weathered sections. Another method that has been used with the step formation problem is to construct concrete or tar ramps from the lower section of the slab to the upper. The problem with this method is that it still leaves uneven slab surfaces that are hazardous and difficult to maintain.

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Finally, another method that is often used is mud jacking. In this repair method a hole is drilled through the uneven slab and wet mud is pumped under the slab until the slab becomes level. The main problem with this method is that it may be difficult to effectively level a slab as the mud will settle over time while drying.

Therefore, from the foregoing discussion it can be clearly seen that it would be desirable to provide a means of leveling existing large slabs in an inexpensive manner that is easily used.

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SUMMARY OF THE INVENTION:

It is the primary objective of the present invention to provide a method of repairing driveways or other similar concrete slabs that have become uneven and damaged due to settling or other changes in the elevation of the earth upon which they are built.

It is an additional objective of the present invention to provide such a method of repairing driveways or other similar slabs which is economical and efficient in operation.

It is a further objective of the present invention to provide such a method of repairing sidewalks that is highly transportable and that can be easily operated.

These objectives are accomplished by the use of a portable high volume air compressor that is connected to a sand storage tank by the use of a high pressure air line. The connection at the sand storage tank is accomplished through an air manifold which is primarily a splitter mechanism which allows the single line of air flow from the air compressor to be diverted to a number of possible different paths. One of these possible paths

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is through the manifold bleed line which extends up over the sand tank and serves the purpose of providing a mechanism by which any excess or unneeded air pressure existing at the manifold can be vented from the system. The manifold also provides the point of attachment for the manifold pressure gauge which allows the user to closely monitor and control the air pressure within the system.

The tank manifold also provides the point at which the compressed air is diverted to the remaining components of the present invention. The air travels from this point through the venturi line to the venturi chamber where it first comes into contact with the mason's sand that is exiting the storage tank through the sand outlet. This sand may typically be a well graded, dry, mason's sand so as to provide optimal compaction. The inflow of highly compressed air into the venturi chamber tends to swirl the sand around inside the mixing chamber which ensures that the flow of compressed air will carry its maximum volume of sand. From the mixing chamber, the mixture of sand and pressurized air passes through the mix chamber venturi which has the effect of increasing the speed and pressure exerted by the sand and air mixture entering the air/sand line.

From this point, the air and sand mixture travels the length of the air/sand line until it gets to the injector gun located at its terminus. The injector gun is the component of the present

invention which directs the flow of air and sand into the desired location under the sidewalk slab and is equipped with an external gauge for monitoring pressure at this point and also a bleed off valve. Additionally, the injector gun is manufactured with easily replaceable components as the steady flow of the air and sand mixture through the gun is extremely abrasive which tends to wear the components quickly.

These components of the present invention function together to facilitate the repair of a damaged sidewalk in the following manner. First, once the targeted section of slab has been identified, the operator drills a hole through the slab in a position that is roughly in its center or strategically placed. Once this has been accomplished, the nozzle portion of the injector gun is forced into this hole which forms an air tight seal between the gun nozzle and the sidewalk slab. The operator then opens and closes the post manifold valve in quick successive burst which forces corresponding bursts of air and sand into the space below the slab. The air pressure in the system is sufficient so that these short bursts will actually lift the sidewalk slab off of the ground which will slightly increase the size of the cavity between the lower surface of the slab and the settled ground. This cavity is then partially filled in by the sand being carried by the air before the slab drops back. The operator simply repeats this process until the settled slab is at

the same level as the remaining sidewalk. Finally, the gun nozzle is removed from the hole which is then patched thus, completing the repair of the damaged slab.

For a better understanding of the present invention
5 reference should be made to the drawings and the description in which there are illustrated and described preferred embodiments of the present invention.

DESCRIPTION OF THE DRAWINGS:

10 FIG. 1 is a perspective view of the present invention which illustrates the manner in which its individual components are connected together.

15 FIG. 2 is a front elevation view of a the sand storage tank component of the present invention and illustrates the method of construction and orientation of the air manifold and the air/sand mixing venturi.

20 FIG. 3 is a front elevation cut-away view of the air/sand mixing venturi component of the present invention illustrating the manner in which pressurized air is introduced into the sand flow.

FIG. 4 is a side elevation view of the injector gun component of the present invention illustrating its manner of construction which feature easily replaced parts.

FIG. 5 is a top elevation view of the injector gun component

of the present invention illustrating its manner of construction and the locations of the air pressure gauge and the pressure relief valve.

FIG. 6 is a side elevation cross sectional view of a section of typically damaged sidewalk in which one portion has settled into the underlying earth.

FIG. 7 is a side elevation cross sectional view of a section of typically damaged sidewalk illustrating a settled portion which has been prepared for repair by the addition of the gun nozzle hole through its body.

FIG. 8 is side elevation cross sectional view of a section of sidewalk to which is being repaired by the use of the injector gun component of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT:

Referring now to the drawings, and more specifically to FIG. 1, slab leveling system 10 is made up of three primary components. The first of these is a high volume air compressor 12 which is typically a transportable device having independent wheels and a trailer tongue by which it is pulled to and from a work site. Additionally, the air compressor is most commonly powered by a small gasoline or diesel engine which allows it to be operated independently without the need for an outside power source.

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The high volume air compressor 12 is connected to the second primary component of the invention, the sand storage tank 16, by the compressor to tank air line 14 which is simply a length of high pressure air hose that is of an inside diameter that is sufficient to handle the volume of air that is required for the efficient operation of the invention. The connection at the sand storage tank 16 is facilitated by the use of the tank manifold 18 which is a threaded cross apparatus which allows the single compressor to tank line 14 to be split into a plurality of different applications. The primary direction the compressed air takes from the tank manifold 18 is down to the venturi chamber 22 which is located adjacent to the sand outlet 20 at the bottom of the sand storage tank 16.

The venturi chamber serves to mix the sand from the sand storage tank 16 with the compressed air stream for its use in accordance with the theme of the present invention. From the venturi chamber 22, the air and sand mixture is channeled into the air/sand line 24 which transports it to the injector gun 26. The injector gun 26 is the component of the present invention which is employed by the operator to direct the flow of air and sand into the proper location that will effectuate the desired repairs.

The manner of construction of the tank manifold 18 and the venturi chamber 22 are further detailed in FIGS. 2 and 3. The

compressor to tank air line 14 enters one of the plurality of ports of the tank manifold 18 through the pre-manifold shutoff valve 34. The pre-manifold shutoff valve 34 allows an operator to close off the air pressure in the compressor to tank air line 14 from the rest of the components of the invention which allows maintenance to be performed without a complete system shut down. This component works partly in conjunction with the manifold bleed line 28 which functions to bleed off air pressure from the system through the bleed line shutoff line 30 located between the tank manifold 18 and the manifold bleed line 28. Thus, this component is employed most commonly in maintenance situations when the air to the system has been closed off by the activation of the pre-manifold shutoff valve 34.

The tank manifold 18 also contains an outlet port which provides the point of attachment for the manifold pressure gauge 32. The manifold pressure gauge 32 provides a point at which the operator can monitor the pressure contained within the system to ensure both that the present invention is operating with enough air pressure so that it operates effectively and under the maximum pressure as prescribed by the design limitations of the invention.

Finally, the tank manifold 18 also provides an outlet port which provides the point of attachment for the manifold to venturi line 38 through the post-manifold shutoff valve 36. The

post-manifold shutoff valve 36 is important to the use of the invention as it is the component through which the operator controls the flow of air to the remaining components downline from it. Thus, by opening the post-manifold shutoff valve 36 compressed air will flow to the injector gun 26 which will in turn carry sand to the desired location.

From the post-manifold shutoff valve 36 the manifold to venturi line 38 extends downward until it connects to the venturi chamber 22. The venturi chamber 22 is the component of the present invention in which sand is introduced into the compressed air flow within the invention. The venturi chamber 22 consists of an air injector 42 which connects the manifold to venturi line 38 to the injector chamber 46 of the venturi chamber 22. The air injector 42 extends a short distance into the injector chamber 46 to a point within the injector chamber 46 that is beyond the sand feed tube 44 which directs the flow of sand from the sand outlet 20 to the venturi chamber 22. The flow of the sand in the sand feed tube 44 is controlled by the opening and closing of the sand outlet valve 78 which is located just below the sand storage tank 16 in the sand outlet 20.

The flow of highly compressed air into the injector chamber 46 at a point that is beyond the area at which the sand is introduced, creates a significant amount of negative pressure within the injector chamber 46 which serves to draw sand into the

mix chamber 40 located just downstream from the venturi chamber 22. The mix chamber 40 is a hollow cylindrical tube which is designed to thoroughly mix the air and sand prior to moving to the other components of the invention. Finally, the downstream end of the mix chamber 40 is equipped with the mix chamber venturi 80 which significantly decreases the inside diameter of the components through which the air and sand mixture is traveling which in turn increases the velocity at which it travels. This increase in velocity enhances the effectiveness of the present invention as it tends to pack the sand in a denser fashion at its intended point of deposit.

After leaving the mix chamber 40 through the mix chamber venturi 80, the air and sand mixture travels through the length of the air/sand line 24 to the injector gun 26. The injector gun 26 is the component of the present invention which is used to direct the flow of air and sand into the desired location. The injector gun 26 is generally made up of common pipe fittings which are easily replaceable and very inexpensive. The reason for this method of construction is the abrasive nature and the high velocity of the air and sand mixture will generally wear through them fairly quickly. Thus, the replaceable nature of the components of the injector gun 26 allows for its continuous operation even when a component wear through problem has occurred.

The flow of the air and sand mixture flows from the air/sand line 24 into the injector gun 26 until it is primarily diverted in a downward fashion by the nozzle tee 56. The nozzle tee 56 has connected to its lower end the gun nozzle 54 which is the component of the invention inserted into the damaged area. This insertion is generally accomplished by placing the tip of the gun nozzle 54 into a pre-drilled hole and forcing it down by pounding on the top of the injector gun 26 with a hammer or other heavy tool. The problem with this is that it tends to damage the tip of the gun nozzle 54 and the easily replaceable nature of the gun nozzle 54 is an added advantage of the overall design of the injector gun 26.

The upper end of the nozzle tee 56 serves as the point of attachment for the pressure read chamber 58 which provides a point of attachment for the gun pressure gauge 48. The gun pressure gauge 48 allows the operator to monitor the air pressure within the injector gun 26 which is very important to the proper operation of the present invention. The pressure read chamber 58 is connected to the body of the injector gun 26 through the connector 62 attachment to the nozzle tee 56. The connector 62 is then connected at its upper end to the pressure tee 60 which is plugged at its upper port by the use of the cap 64. This configuration leaves the pressure tee 60 free for the attachment of the pressure read chamber 58. Finally, the pressure read

chamber 58 also contains a gun bleed off 50 which is operated through the bleed off valve 52 and allows an operator to relieve any excess or unwanted air pressure which may be present within the injector gun 26.

5 The manner in which the present invention is employed to repair a slab 82 which has been damaged through ground settling is detailed in FIGS. 6, 7, and 8. FIG. 6 illustrates the typical situation in which a damaged slab 68 of a larger slab 82 exists which has in whole or in part settled into the underlying ground 70 below the normal position of a level cement slab 66 of the slab 82. This situation creates a potentially dangerous variance in the heights of neighboring portions of the slab 82 which must be repaired.

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20 The repair process of the present invention is commenced by drilling a gun nozzle hole 72 through the damaged slab 68 as illustrated in FIG. 7 which provides access to the ground 70 below the damaged slab 68. Upon completion of this step, the gun nozzle 54 of the injector gun 26 is secured within the gun nozzle hole 72 and the operator engages the present invention by providing compressed air flow to the invention's delivery components, sharp blasts or at a steady pressure. The initial effect of these blasts is to momentarily lift the damaged slab 68 off of the underlying ground 70 which creates a settle cavity 74 between them. This settle cavity 74 is then partially filled in

by the mason's sand 76 being carried by the compressed before it can drop back down. This process is simply repeated until the upper surface of the damaged slab 68 is at the same elevation as the level cement slab 66 of the slab 82. With this accomplished, the injector gun 26 is removed from the gun nozzle hole 72 which is then filled in with the appropriate material to complete the sidewalk 82 repair process.

Although the present invention has been described in considerable detail with reference to certain preferred versions thereof, other versions are possible. Therefore, the spirit and scope of the appended claims should not be limited to the description of the preferred versions contained herein.

What is claimed:

1. A system using sand for lifting and leveling slabs which may have settled said system comprising:

a sand storage tank having a sand outlet;

5 a compressed air source in fluid tight connection with said sand outlet;

a mixing chamber connected to said sand outlet and said compressed air source; and

10 an elongate air and sand delivery line connected to said mixing chamber.

2. A system using sand for lifting and leveling slabs as in claim 1 further comprising an injector gun having a gun bleed off valve for releasing excess pressure and a gun nozzle for the delivery of sand air mixture.

15 3. A system using sand for lifting and leveling slabs as in claim 2 wherein said mixing chamber is a smaller air source hose fitted inside of a larger diameter sand outlet so as to create a venturi effect.

20 4. A system using sand for lifting and leveling slabs as in claim 3 further comprising a compressed air bleed valve between said compressed air source and sand outlet.

5. A system using sand for lifting and leveling slabs as in claim 4 further comprising a sand shutoff valve between said sand storage tank and said mixing chamber.

6. A system using sand for lifting and leveling slabs as in claim 5 wherein said compressed air source is a high volume air compressor.

7. A system for lifting and leveling a slab defining at least one drilled hole said system comprising:

a sand storage tank having a sand outlet;

a supply of well dried mason's sand within said sand storage tank;

a compressed air source in fluid tight connection with said sand outlet;

a mixing chamber connected to said sand outlet and said compressed air source;

an elongate air and sand delivery line connected to said mixing chamber; and

an injector gun having a gun bleed off valve for releasing excess pressure and a gun nozzle for the delivery of sand air mixture in a substantially fluid tight connection with said drilled hole.

8. A system for lifting and leveling a slab as in claim 7 wherein said mixing chamber is a smaller air source hose fitted inside of a larger diameter sand outlet so as to create a venturi effect.

9. A system for lifting and leveling a slab as in claim 8 further comprising a compressed air bleed valve between said

compressed air source and sand outlet.

10. A system for lifting and leveling a slab as in claim 9 further comprising a sand shutoff valve between said sand storage tank and said mixing chamber.

5 11. A system for lifting and leveling a slab as in claim 10 wherein said compressed air source is a high volume air compressor.

12. A method of lifting and leveling a slab said method comprising the steps of:

10 supplying a sand storage tank filled with a well dried mason's sand said storage tank having a sand outlet;

supplying a compressed air source in fluid tight connection with said sand outlet;

15 mixing said sand and said compressed air in a mixing chamber;

delivering said sand and air mixture to an injector gun via an elongate fluid tight hose said gun further having an gun nozzle;

drilling a hole and said slab to be leveled; and

20 attaching said gun nozzle to said drilled hole.

13. A method of lifting and leveling a slab as in claim 12 further comprising the step of supplying a compressed air bleed valve between said compressed air source and sand outlet.

14. A method of lifting and leveling a slab as in claim 13

further comprising the step of operating said compressed air bleed valve to release excess pressure.

15. A method of lifting and leveling a slab as in claim 14 further comprising the step of supplying a sand shutoff valve
5 between said sand storage tank and said mixing chamber.

16. A method of lifting and leveling a slab as in claim 15 further comprising the step of adjusting said sand shutoff valve so as to control the flow of sand to said mixing chamber.

ABSTRACT:

A system for leveling a slab by raising and filling in voids under the slab. A mixture of compressed air and well dried sand is pumped through hose to a gun nozzle. The slab to be leveled is supplied with at least one hole for receiving the gun nozzle in a fluid tight connection. The compressed air is used to lift the slab while the sand is used to fill the void and keep the slab in a level position. The operator may supply successive burst of pressure to lift the slab as needed, while adjusting the air and sand flow. Finally, the gun nozzle is removed from the hole which is then patched thus, completing the repair of the damaged slab.

FIG 2

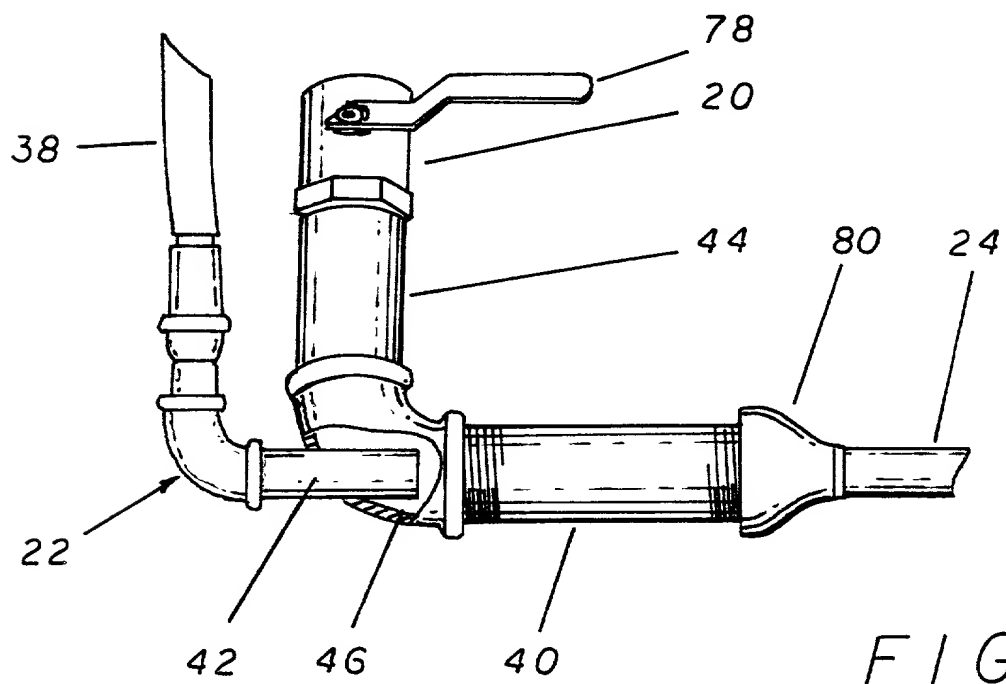
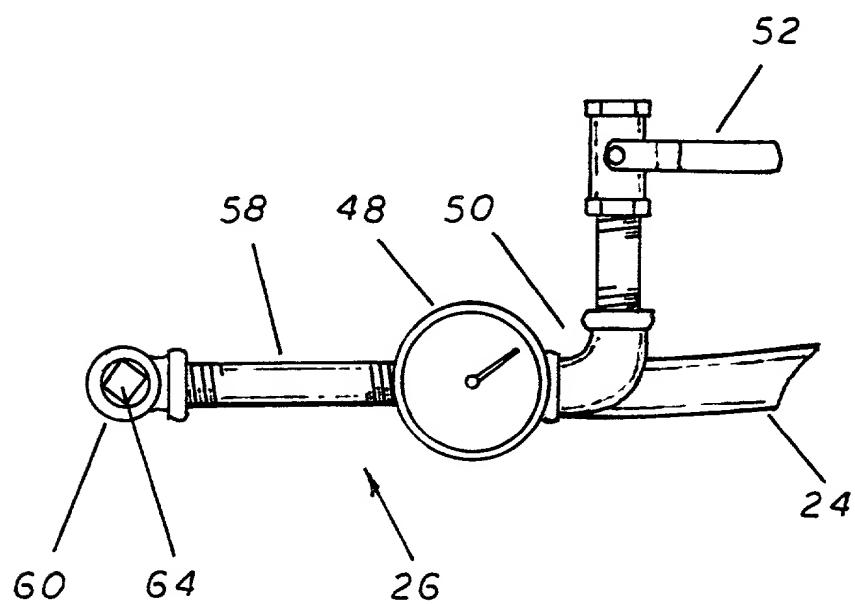
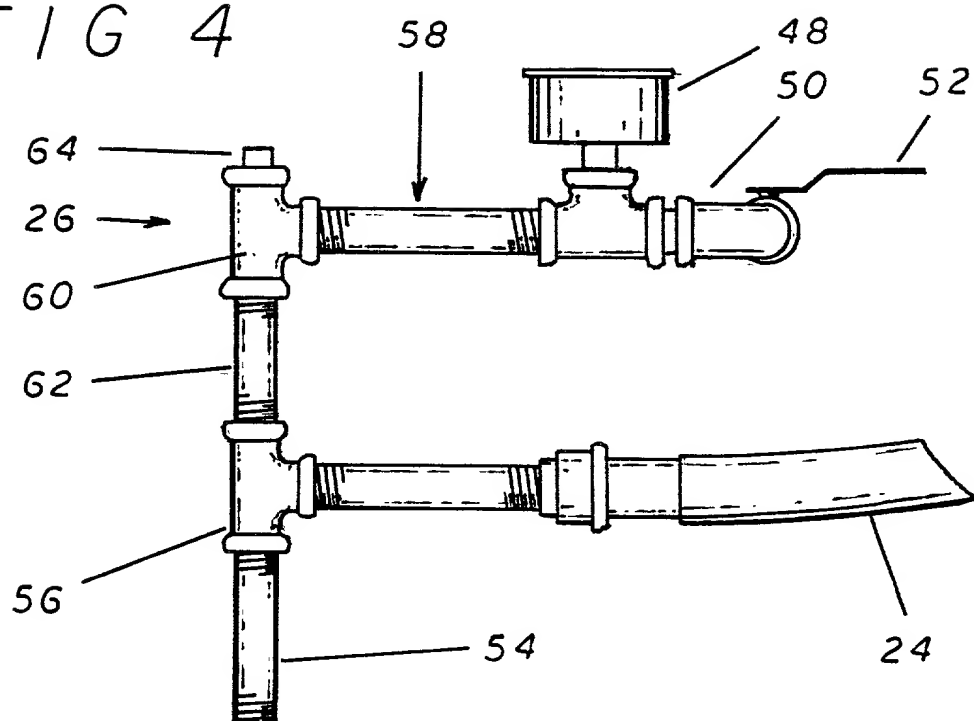


FIG 4



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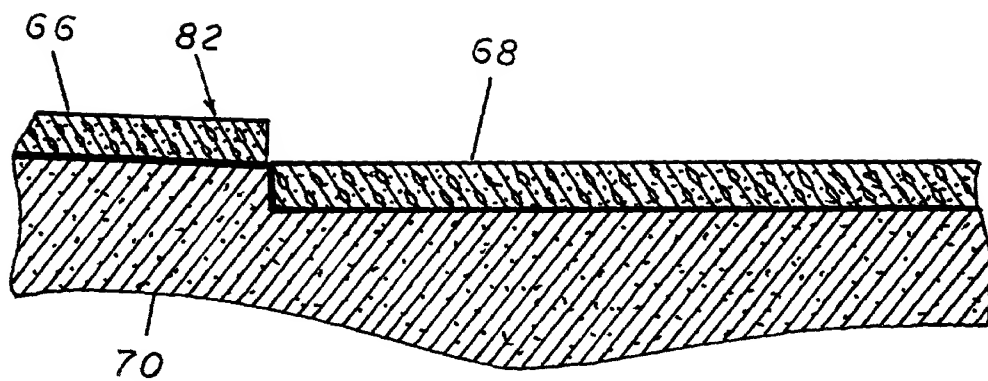


FIG 7

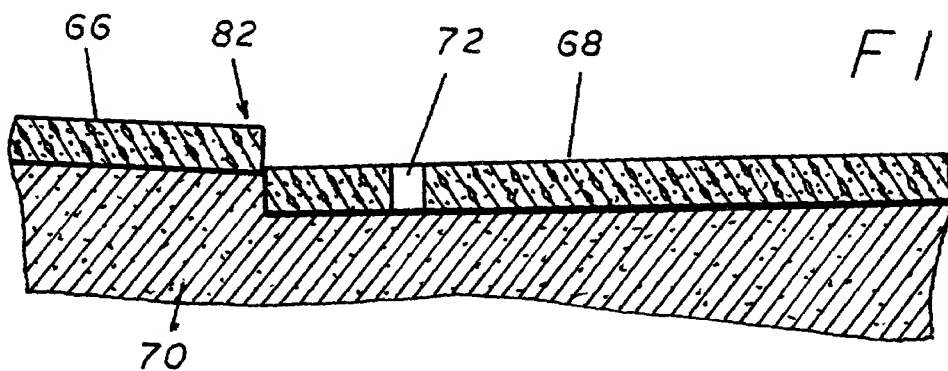
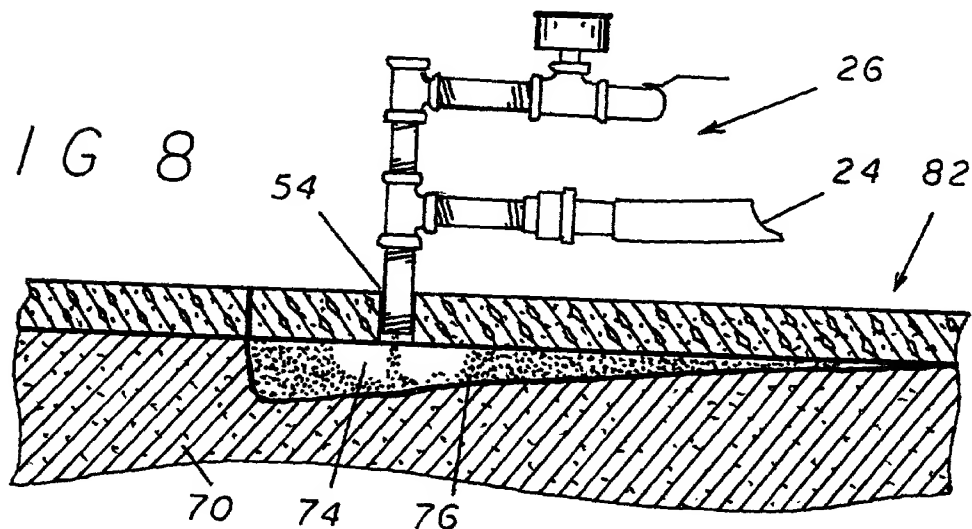


FIG 8



DECLARATION FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **Slab Leveling System and Method**, the specification of which is attached hereto unless the following box is checked:

☐ was filed on _____ as United States Application Number or PCT International Application Number _____ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR, §1.56.

I hereby claim foreign priority benefits under 35, U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

(Number)	(Country)	(Day/Month/Year Filed)
(Number)	(Country)	(Day/Month/Year Filed)

☐
☐

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

(Application Number)	(Filing Date)
(Application Number)	(Filing Date)

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Filing Date)	(Status -- patented, pending, abandoned)	(Application Number)
(Filing Date)	(Status -- patented, pending, abandoned)	(Application Number)

I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

Curtis V. Harr, Reg. No. 37, 844

Address all telephone calls to	Curtis V. Harr	at telephone number	(701) 298-3001
Address all correspondence to	Curtis V. Harr	fax number	(701) 298-3002
	P. O. Box 2842		
	Fargo, ND 58108-2842		

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor (given name, family name): **Charles Lee Asplin**

Inventor's signature _____ Date: **10-12-00**

Residence: **Fargo, North Dakota** Citizenship: **US**

Post Office Address: **909 25th Avenue North, Fargo, North Dakota 58102**

Full name of second joint inventor, if any (given name, family name):

Second Inventor's signature _____ Date: _____

Residence: _____ Citizenship: _____

Post Office Address: _____

☐ Additional inventors are being named on separately numbered sheets attached hereto.

POWER OF ATTORNEY

Charles Lee Asplin, owner of the application for United States Letters Patent for an improvement in a *Slab Leveling System and Method*, by *Charles Lee Asplin* executed on even date herewith does hereby appoint as attorney of record with full power of substitution and revocation, to prosecute this application and transact all business in the Patent and Trademark Office connected therewith:

Curtis V. Harr, Reg. No. 37,844



Reg. No. 37,844

Curtis V. Harr
Registered Patent Attorney

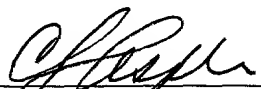
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Direct Calls to:

Curtis Harr
(701) 298-3001
facsimile (701) 298-3002

I, the undersigned, declare that I am the owner of the above-identified application or if the owner is a corporation, partnership or other association, I am authorized to make this appointment on behalf of the owner and I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.



Charles Lee Asplin
909 25th Avenue North
Fargo, ND 58102

Date 10-12-00